

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 2, 5-9 and 11, 12, and 14-22 are pending. Claims 15-21 are withdrawn from consideration. Claims 3, 4, 10 and 13 have been canceled. Claims 1, 6, 12, 15 and 19 are independent. Claims 6, 9 and 12 are amended. Reconsideration of this application, as amended, is respectfully requested.

Claim Objections

Claim 12 is objected to because the relationship between the recited "gate insulator" and the recited "gate insulation film" is not clear. Applicants have amended claim 12 to clarify this relationship.

Claims 9 and 13 are objected to for not further limiting the claims from which they, respectively, depend. Claim 9 has been amended to further limit claim 6, from which it depends, and claim 13 has been canceled, thereby mooting the objection to claim 13.

It is respectfully submitted that the amendments to claims 9 and 12 and cancellation of claim 13 overcomes these objections.

Accordingly, the objections to claims 9, 12 and 13 should be withdrawn.

Claim Rejections under 35 U.S.C. §112, Second Paragraph

Claims 6-9, 11-14 and 22 stand rejected under 35 USC §112, second paragraph, as being indefinite because the language “a whole of a pixel region” is unclear.

Applicants have amended claims 6 and 12 to change “in a whole of a pixel region” to “at a pixel region”. Support for “at a pixel region” is found throughout Applicants’ original disclosure including, for example, on page 2, last line, and page 11, third last line.

Reconsideration and withdrawal of this rejection are respectfully requested.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1, 2, and 5 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,414,730 to Akamatsu et al. (hereinafter, “Akamatsu”) in view of U.S. Patent 5,926,235 to Han et al. (hereinafter, “Han”). These rejections are respectfully traversed.

Because the rejection is based on 35 USC §103, what is in issue in such a rejection is “the invention as a whole”, not just a few features of the claimed invention. Under 35 U.S.C. §103, “[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said

subject matter pertains." The determination under §103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. See In re O'Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. See Medtronic, Inc. v. Cardiac Pacemakers, Inc., 721 F.2d 1563, 1567, 220 USPQ 97, 101 (Fed. Cir. 1983).

In rejecting claims under 35 USC 103, it is incumbent on the examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

These showings by the examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A showing of a suggestion, teaching, or motivation to combine the prior art references is an “essential evidentiary component of an obviousness holding.” C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not “evidence.” See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

The Office Action clearly, unmistakably and unequivocally admits that Akamatsu does not disclose a storage capacitor including a part of the gate line as a first storage electrode, a portion of the gate insulation layer, and a second

storage electrode having an island shape, wherein the first storage electrode is formed of the same material as the gate electrode and the second storage electrode is formed of the same material as the source and drain electrodes.

In an attempt to remedy this admitted deficiency. The Office Action turns to Han, which discloses a storage capacitor including a part of the gate line as a first storage electrode, a portion of the gate insulation layer, and a second storage electrode having an island shape, wherein the first storage electrode is formed of the same material as the gate electrode and the second storage electrode is formed of the same material as the source and drain electrodes.

The alleged motivation to modify Akamatsu by including the storage capacitor of Han is "for the purpose of increasing the response time of the pixels by allowing localized signal storage".

Applicants respectfully submit that this is not a demonstration of proper motivation to combine the applied references as suggested.

Akamatsu already discloses localized signal storage. See, for example, Fig. 12, which clearly shows localized signal storage capacitors 3. The Office Action fails to demonstrate that a skilled worker would desire to modify Akamatsu to provide localized signal storage because Akamatsu already provides such a feature.

As pointed out above, a showing of proper motivation must be clear and particular, and broad conclusory statements about the teaching of multiple

references, standing alone, are not “evidence.” See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999). The statement “for the purpose of . . . allowing localized signal storage” is nothing more than a broad conclusory statement about both Akamatsu and Han, and does not constitute evidence of proper motivation to provide the storage capacitor features of Han for Akamatsu.

The Examiner may not pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve Inc., 796 F.2d 443, 448, 230 USPQ 416, 419 (Fed. Cir. 1986), cert. denied, 484 U.S. 823 (1987) and In re Kamm, 452 F.2d 1052, 1057, 172 USPQ 298, 301-2 (CCPA 1972), and obviousness cannot be established by locating references which describe various aspects of appellant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what appellants have done. Ex parte Levengood, 28 USPQ2d 1300, 1302 (Bd. App. & Int. 1993). Here the Office Action fails to present any persuasive evidence of such a motivating force.

Accordingly, Applicants respectfully submit that this rejection of claims 1, 2 and 5 is improper and should be withdrawn.

The Office Action rejects claims 6-9 and 11 under 35 USC §103(a) as unpatentable over Han in view of U.S. Patent 6,025,605 to Lyu. This rejection is respectfully traversed.

The Office Action alleges that Han discloses the features recited in claims 6-9 and 11 except for the alignment of the ends of the thin film transistor with the ends of the source and drain electrodes and being located below the source and drain electrodes. The Office Action relies on Lyu for disclosure of a semiconductor layer and an ohmic contact layer having ends lined with and directly below corresponding ends of the source electrode and drain electrode. The Office Action concludes that it would be obvious to modify Han to provide such a feature "for the purpose of simplifying the production process and reducing manufacturing costs."

Applicants respectfully submit that this alleged motivation is not supported by objective evidence of record and is improperly based solely on speculation unsupported by objective evidence of record.

In the first place, Lyu discloses that the ends of the second metal layer 143, the n-plus semiconductor layer 139 and semiconductor layer 137 are aligned in col. 3, lines 55-62. No reason for forming them in that matter is stated. All that is stated is "[S]econd metal layer 143, n-plus semiconductor layer 139, and semiconductor layer 137 are then patterned into a desired shape, as shown in Fig. 3F."

No reason is given by Lyu to explain why this shape is desired.

More particularly, there is no disclosure in Lyu that the desired shape is achieved for the purpose of simplifying the production process and/or for reducing manufacturing costs.

These reasons are based purely on speculation by the Examiner and are not supported by any objective evidence of record.

As is well settled, a rejection based on §103 must rest on a factual basis, with the facts being interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, the Examiner has the initial duty of supplying the factual basis for the rejection advanced. An Examiner may not, because of doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. See, In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

Thus, the alleged motivation for combining these references, which is wholly speculative and not supported by objective evidence, is improper.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention.

Reconsideration and withdrawal of this rejection of claims 6-9 and 11 is respectfully requested.



Claims 12-14 and 22 stand rejected under 35 USC §103(a) as unpatentable over U.S. Patent Application Publication 2001/0019376 to Kim. This rejection is respectfully traversed.

The Office Action clearly, unmistakably and unequivocally admits that Kim's semiconductor layer and ohmic contact layer ends are not aligned with or directly below the corresponding ends of the drain electrodes. The Office Action relies on Lyu for disclosure of a semiconductor layer and an ohmic contact layer having ends lined with and directly below corresponding ends of the source electrode and drain electrode. The Office Action concludes that it would be obvious to modify Kim to provide such a feature "for the purpose of simplifying the production process and reducing manufacturing costs."

Applicants respectfully submit that this alleged motivation is not supported by objective evidence of record and is improperly based solely on speculation unsupported by objective evidence of record.

In the first place, Lyu discloses that the ends of the second metal layer 143, the n-plus semiconductor layer 139 and semiconductor layer 137 are aligned in col. 3, lines 55-62. No reason for forming them in that matter is stated. All that is stated is "[S]econd metal layer 143, n-plus semiconductor layer 139, and semiconductor layer 137 are then patterned into a desired shape, as shown in Fig. 3F."

No reason is given to explain why this shape is desired.

More particularly, there is no disclosure in Lyu that the desired shape is achieved for the purpose of simplifying the production process and/or for reducing manufacturing costs.

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Thus, the alleged motivation for combining these references, which is wholly speculative and not supported by objective evidence, is improper.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention.

Reconsideration and withdrawal of this rejection of claims 12-14 and 22 is respectfully requested.

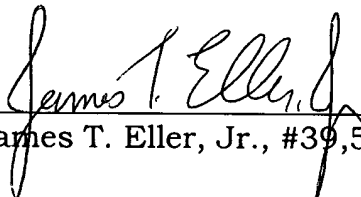
CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert J. Webster, Registration No. 46,472, at the telephone number of the undersigned below, for example, to conduct an interview in an effort to resolve the outstanding matters and to expedite prosecution of the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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